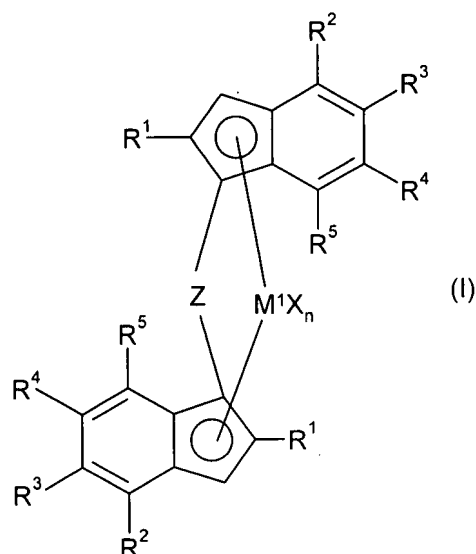


AMENDMENTS TO THE CLAIMS

1. (Previously presented) An organometallic transition metal compound of the formula (I)



where

- M^I is an element of group 3, 4, 5 or 6 of the Periodic Table of the Elements or the lanthanides,
- X are identical or different and are each halogen, hydrogen, C_1 - C_{20} -alkyl, C_2 - C_{20} -alkenyl, C_6 - C_{22} -aryl, alkylaryl or arylalkyl each having from 1 to 10 carbon atoms in the alkyl part and from 6 to 22 carbon atoms in the aryl part, $-OR^6$ or $-NR^6R^7$, where two radicals X may also be joined to one another,
- n is a natural number from 1 to 4 which corresponds to the oxidation number of M^I minus 2,
- R^1 is hydrogen or a cyclic, branched or unbranched C_1 - C_{20} -alkyl radical, a C_2 - C_{20} -alkenyl radical, an arylalkyl radical having from 1 to 10 carbon atoms in the alkyl part and from 6 to 22 carbon atoms in the aryl part or a C_4 - C_{24} heteroaromatic radical selected from the group consisting of substituted or unsubstituted thienyl radicals or of substituted or unsubstituted furyl radicals,
- R^2 is a substituted or unsubstituted C_6 - C_{40} -aryl radical,

- R^3 is hydrogen or a cyclic, branched or unbranched C_1 - C_{20} -alkyl radical, C_2 - C_{20} -alkenyl radical, an arylalkyl radical having from 1 to 10 carbon atoms in the alkyl part and from 6 to 22 carbon atoms in the aryl part, or the radicals R^2 and R^3 together form a ring system,
- R^4 is hydrogen or a cyclic, branched or unbranched C_1 - C_{20} -alkyl radical, a C_2 - C_{20} -alkenyl radical, an arylalkyl radical having from 1 to 10 carbon atoms in the alkyl part and from 6 to 22 carbon atoms in the aryl part,
- R^5 is a cyclic, branched or unbranched C_1 - C_{20} -alkyl radical, a C_2 - C_{20} -alkenyl radical, an arylalkyl radical having from 1 to 10 carbon atoms in the alkyl part and from 6 to 22 carbon atoms in the aryl part, and
- Z is a divalent group $CR^8R^9-CR^{10}R^{11}$, where R^8 , R^9 , R^{10} and R^{11} are identical or different and are each hydrogen or a trimethylsilyl group, a C_1 - C_{10} -alkyl group, a C_1 - C_{10} -fluoroalkyl group, a C_6 - C_{10} -fluoroaryl group, a C_6 - C_{10} -aryl group, a C_8 - C_{40} -arylalkenyl group, a C_7 - C_{40} -arylalkyl group or a C_7 - C_{40} -alkylaryl group or two adjacent radicals together with the atoms connecting them may form a saturated or unsaturated ring having from 4 to 15 carbon atoms.

2. (Original) An organometallic transition metal compound of the formula (I) as claimed in claim 1,

where

M^1 is an element of group 4 of the Periodic Table of the Elements,

n is 2,

R^1 is C_1 - C_{10} -alkyl,

R^3 is hydrogen or a C_1 - C_{10} -alkyl radical,

R^4 is hydrogen or a C_1 - C_{10} -alkyl radical,

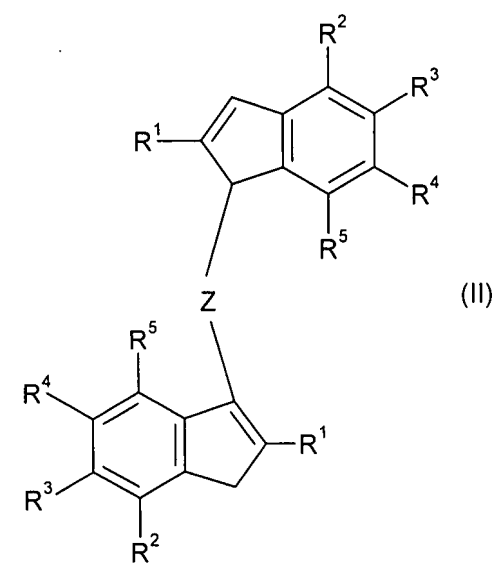
R^5 is a C_1 - C_{10} -alkyl radical and

Z is CH_2-CH_2 .

3. (cancelled)

4. (cancelled)

5. (Previously presented) A catalyst system for the polymerization of olefins comprising at least one organometallic transition metal compound as claimed in claim 1 and at least one cocatalyst as cation-forming compound.
6. (Original) A catalyst system as claimed in claim 5 which further comprises a support.
7. (Previously presented) A process for preparing polyolefins by polymerization or copolymerization of at least one olefin in the presence of a catalyst system as claimed in claim 5.
8. (cancelled)
9. (currently amended) A process for preparing an organometallic transition metal compound, which comprises reacting a biscyclopentadienyl ligand system ~~as claimed in claim 3~~ or a bisanion prepared therefrom with a transition metal compound, the biscyclopentadienyl ligand system comprising a compound of formula (II):



or its double bond isomers,

where

R¹ is hydrogen or a cyclic, branched or unbranched C₁-C₂₀-alkyl radical, a C₂-C₂₀-alkenyl radical, an arylalkyl radical having from 1 to 10 carbon atoms in the alkyl part and from 6 to 22 carbon atoms in the aryl part or a C₄-C₂₄ heteroaromatic

radical selected from the group consisting of substituted or unsubstituted thienyl radicals or of substituted or unsubstituted furyl radicals,

R² is a substituted or unsubstituted C₆-C₄₀-aryl radical,

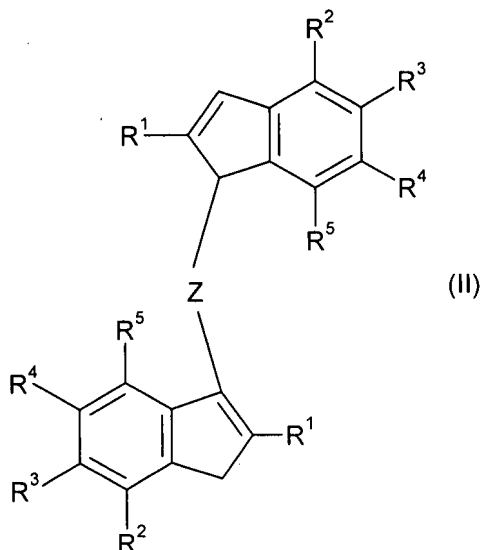
R³ is hydrogen or a cyclic, branched or unbranched C₁-C₂₀-alkyl radical, C₂-C₂₀-alkenyl radical, an arylalkyl radical having from 1 to 10 carbon atoms in the alkyl part and from 6 to 22 carbon atoms in the aryl part,
or the radicals R² and R³ together form a ring system,

R⁴ is hydrogen or a cyclic, branched or unbranched C₁-C₂₀-alkyl radical, a C₂-C₂₀-alkenyl radical, an arylalkyl radical having from 1 to 10 carbon atoms in the alkyl part and from 6 to 22 carbon atoms in the aryl part,

R⁵ is a cyclic, branched or unbranched C₁-C₂₀-alkyl radical, a C₂-C₂₀-alkenyl radical, an arylalkyl radical having from 1 to 10 carbon atoms in the alkyl part and from 6 to 22 carbon atoms in the aryl part,
and

Z is a divalent group CR⁸R⁹-CR¹⁰R¹¹, where R⁸, R⁹, R¹⁰ and R¹¹ are identical or different and are each hydrogen or a trimethylsilyl group, a C₁-C₁₀-alkyl group, a C₁-C₁₀-fluoroalkyl group, a C₆-C₁₀-fluoroaryl group, a C₆-C₁₀-aryl group, a C₈-C₄₀-arylalkenyl group, a C₇-C₄₀-arylalkyl group or a C₇-C₄₀-alkylaryl group or two adjacent radicals together with the atoms connecting them form a saturated or unsaturated ring having from 4 to 15 carbon atoms.

10. (currently amended) A biscyclopentadienyl ligand system ~~as claimed in claim 3, wherein~~ of formula (II):



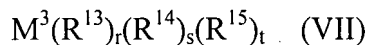
or its double bond isomers,

where

- R^1 is hydrogen or a cyclic, branched or unbranched C_1 - C_{20} -alkyl radical, a C_2 - C_{20} -alkenyl radical, an arylalkyl radical having from 1 to 10 carbon atoms in the alkyl part and from 6 to 22 carbon atoms in the aryl part or a C_4 - C_{24} heteroaromatic radical selected from the group consisting of substituted or unsubstituted thienyl radicals or of substituted or unsubstituted furyl radicals,
- R^2 is a substituted or unsubstituted C_6 - C_{40} -aryl radical,
- R^3 is hydrogen or a cyclic, branched or unbranched C_1 - C_{20} -alkyl radical, C_2 - C_{20} -alkenyl radical, an arylalkyl radical having from 1 to 10 carbon atoms in the alkyl part and from 6 to 22 carbon atoms in the aryl part,
or the radicals R^2 and R^3 together form a ring system,
- R^4 is hydrogen or a cyclic, branched or unbranched C_1 - C_{20} -alkyl radical, a C_2 - C_{20} -alkenyl radical, an arylalkyl radical having from 1 to 10 carbon atoms in the alkyl part and from 6 to 22 carbon atoms in the aryl part,
- R^5 is a cyclic, branched or unbranched C_1 - C_{20} -alkyl radical, a C_2 - C_{20} -alkenyl radical, an arylalkyl radical having from 1 to 10 carbon atoms in the alkyl part and from 6 to 22 carbon atoms in the aryl part,
- and
- Z is a divalent group $CR^8R^9-CR^{10}R^{11}$, where R^8 , R^9 , R^{10} and R^{11} are identical or different and are each hydrogen or a trimethylsilyl group, a C_1 - C_{10} -alkyl group, a

C₁-C₁₀-fluoroalkyl group, a C₆-C₁₀-fluoroaryl group, a C₆-C₁₀-aryl group, a C₈-C₄₀-arylalkenyl group, a C₇-C₄₀-arylalkyl group or a C₇-C₄₀-alkylaryl group or two adjacent radicals together with the atoms connecting them form a saturated or unsaturated ring having from 4 to 15 carbon atoms.

11. (Previously presented) A catalyst system as claimed in claim 5 further comprise a metal compound of the formula (VII)



wherein

M³ is an alkali metal, an alkaline earth metal or a metal of group 13 of the Periodic Table,

R¹³ is hydrogen, C₁-C₁₀-alkyl, C₆-C₁₅-aryl, alkylaryl or arylalkyl each having from 1 to 10 carbon atoms in the alkyl part and from 6 to 20 carbon atoms in the aryl part,

R¹⁴ and R¹⁵ are identical or different and are each hydrogen, halogen, C₁-C₁₀-alkyl, C₆-C₁₅-aryl, alkylaryl, arylalkyl or alkoxy each having from 1 to 10 carbon atoms in the alkyl radical and from 6 to 20 carbon atoms in the aryl radical,

r is an integer from 1 to 3,

and

s and t are integers from 0 to 2, where the sum r+s+t corresponds to the valence of M³.

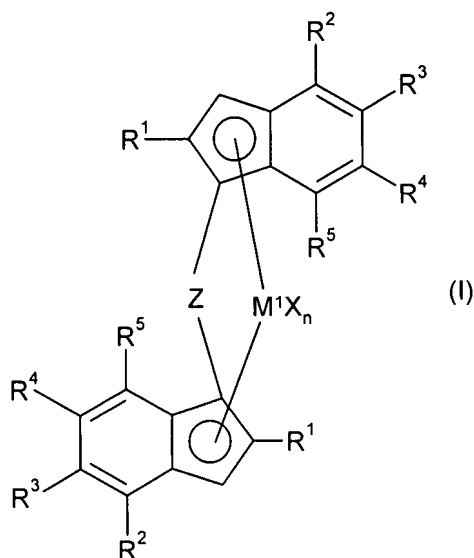
12. (Previously presented) A catalyst system as claimed in claim 11 wherein M³ is boron, aluminum, gallium, indium or thallium.

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph of the Abstract with the following amended paragraph:

Abstract

The present invention relates to ~~organometallic transition metal~~ compounds of the formula (I):



where

- M^I is an element of group 3, 4, 5 or 6 of the Periodic Table ~~of the Elements or the lanthanides~~,
- X are ~~identical or different and are each~~ halogen, hydrogen, C_1 - C_{20} -alkyl, C_2 - C_{20} -alkenyl, C_6 - C_{22} -aryl, alkylaryl or arylalkyl ~~each having from 1 to 10 carbon atoms in the alkyl part and from 6 to 22 carbon atoms in the aryl part, OR^6 or NR^6R^7 , where two radicals X may also be joined to one another~~,
- n is a natural number from 1 to 4 ~~which corresponds to the oxidation number of M^I minus 2~~,
- R^I is hydrogen or a C_1 - C_{40} radical,

R^2 is a substituted or unsubstituted C_6 - C_{40} -aryl radical or C_2 - C_{40} -heteroaromatic radical containing at least one heteroatom ~~selected from the group consisting of O, N, S and P,~~

R^3 is hydrogen or a C_1 - C_{40} radical,

or the radicals R^2 and R^3 together form a ring system,

R^4 is hydrogen or a C_1 - C_{40} radical,

R^5 is a C_1 - C_{40} radical,

and

Z is a divalent group $CR^8R^9-CR^{10}R^{11}$, where R^8 , R^9 , R^{10} and R^{11} are ~~identical or different and are each~~ hydrogen or a C_1 - C_{40} radical;

~~bisecyclopentadienyl ligand systems having such a substitution pattern, catalyst systems comprising at least one of the organometallic transition metal compounds of the present invention, a process for preparing polyolefins by polymerization or copolymerization of at least one olefin in the presence of one of the catalyst systems of the present invention and the use of the bisecyclopentadienyl ligand systems of the present invention for preparing organometallic transition metal compounds.~~